Session 6A: Fish Ecology and Biology

Questions & Answers

Eric Eisenhardt
Q: How did you measure these fish? Secondly, did you always observe them during a flood tide or ebb tide and how much do they actually move?

A: I didn't want to go into too many of the methods here, it will be in the proceedings really detailed version of my methods. Essentially, I would go out with a meter-long piece of PVC that was in 10-cm increments, much like Terry Kirby's tool. I also had a plexiglass ruler mounted perpendicularly on the end of the metered stick so I could reach that out and move slowly and put that sometimes right up against the fish or right underneath, actually measured to centimeter quite accurately, I think more accurately than just a 10-centimeter increment. The other question: All the diving was done on slack tides so on either a high or a low tide, I adjusted the depths. I stratified by depths. I did actually four different depth strata with twelve 25-meter transects during each dive, and I adjusted the tide height to be a mean-mean low water and that's why I did the depths often. I tried to make it as similar between sites as I could. What I did, on each where I had a good exchange, where I could do two-hour long dives on one tidal exchange, I'd go the non-reserve or reserve site, I'd randomly determine which one and would do each pair at the same time. And then the next day I'd do the next pair, and the next day I'd do the next pair, so I tried to make everything as similar as possible. I also took habitat data of both physical and biologic percent cover of algae and macroinvertebrates. An also some complexity and slope and striking dip of the reef face and that type of information as well for each transect so that's part of the…what I am going to do eventually…is analyze each transect that 12 of at each dive, which I did four times of each and put in all the other parameters into the model and see if that reduces some of the variance. The other thing, how much they move, you mean the fish individually? It's not that well known, there's some work done by Kathleen Matthews a few years ago where she put some acoustic transmitters on the fish and then followed them for several weeks afterwards and some of the rockfish, the quillback, copper and browns, seemed to stay right within the same area, and some of them showed some homing behavior. I think there is some other studies as well that show there is some pretty high site fidelity with some of these species.

Tony Parra
Q: Can you measure the length of wolf eel and relate it to mate and site fidelity?

A: It can be done. In the context of a behavioral study such as this, it involves physically removing the fish from its den and again, as in the case of our tagging, constitutes a behavioral stressor that may cause the fish to flee, take up residence in a different den, so we try to minimize those interactions and that's again, another example of why we have moved toward photographic identification and much as possible.

Q: How old do they live and at what age do they reach sexual maturity?

A: Others' work found that they reach sexual maturity in captivity at age 4-5 years. We are not sure if that is reflective of their age of maturity in the wild since the conditions in aquaria are much different than those in natural environments. We haven't taken any aging samples from these fish, although it's quite possible to remove odaliths and other hard parts. Again, it contradicts the current survey and I am reluctant to remove animals during a behavioral survey where at this point there is no non-lethal means of acquiring that data.

[Question not recorded.]

A: No, that assumption is based on observations made I others' work. It's also made on a number of other males that have similar scarring patterns but it's largely based on observations in the general description of their life history as well as a number of recreational divers who have actually seen these events and were cited in his work.

Q: How many are actually being harvested? How much are they used as food fish?

A: We don't know how many are being harvested only mainly to the fact they are seldom caught in hook-and-line fisheries because of their proximity to substrate, and their prey base differs from the types of bait recreational fishermen often use. The vulnerability, however, on the species to harvest lies primarily in spear fishing, dive fisheries, where they are particularly subject by virtue of being cornered and being relatively sedate compared to most other bottomfish to that kind of harvest.

[Question not recorded.]

A: They are being used as feed fish. They have turned up in specialty markets as sushi and a reportedly high quality table fish by recreational fishermen who have captured and kept them.